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THE ECONOMIC AND SOCIAL EFFECTS OF THE FISHING INDUSTRY -

A Comparative Study

prepared by

Helga Josupeit
Fishery Policy and Planning Division
FAO Fisheries Department

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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PREPARATION OF THIS PAPER

This paper is an up-dating of the FAO Fisheries Circular No. 314, FIE/C314. The Tables I, II and III have been updated in Table I, III and V of the new Circular. The Tables II, IV and VI have been added and show successively the importance of fish in the animal protein supply (Table II), the relative importance of fish products trade - 1978, as a share of total imports (Table IV) and the importance of employment created by the fishing industry compared with the population working in agriculture (Table VI). The Table IV of the 1973 Fisheries Circular has been omitted as the contents were no longer applicable, due to the changes in the law of the sea. A new section with Tables VII and VIII has been added, showing the importance of the fishing industry in the national economy.

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ABSTRACT

This paper puts together statistical data concerning the importance of the fishing industry for the various countries. The first two tables indicate the importance of fish for the daily protein intake, the next two tables indicate the importance of the industry for the balance of payments. Tables V and VI show the number of fishermen and thus identify the role of fisheries in employment. The last two tables discuss the influence of the fishing industry on the national economy. Table A of the Annex gives the food supply figures in alphabetical order.

THE ECONOMIC AND SOCIAL EFFECTS OF THE FISHING INDUSTRY

A COMPARATIVE STUDY

Contents

		Paragraphs
Section I:	Introduction and Summary	1
Section II:	The Role of Fisheries in Balanced Economic Development - Fish as Food	2 - 9
Section III:	Fish and the Balance of Payments	10 - 14
Section IV:	The Fishing Industry as a Source of Employment	15 - 24
Section V:	Indirect Economic Effects of the Fishing Industry	25
Section IV:	Fisheries Output and Gross Domestic Product	26 - 31
Annex	-	32 - 36

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The term "country" as used in this paper covers also territories, parts of territories or combinations of countries such as customs unions. This usage does not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of any land or sea frontiers or boundaries.

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Explanation of standard symbols:

-	nil
ø	negligible quantity (less than one half of the unit indicated)
...	data not available

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I. INTRODUCTION AND SUMMARY

1. The present paper is the up-dating of a document "The Economic and Social Effects of the Fishing Industry - a comparative study", FAO Fisheries Circular No. 314, Rome, 1973. It will be interesting to compare the 1973 figures with the present ones to see how changes in the fishing rights, especially the changing laws of the sea, have influenced the importance of the fishing industries in the various countries.

2. There is a problem of definition. One of the ways in which the primary activity of fishing can help in the development of an economy is through the inducements it provides for the establishment of other industries, and also the effect of processing and distribution of fish as well as the manufacture of boats and gear and associated industries. The statistical system adopted by most countries, however, makes it difficult to identify the importance of this secondary sector of the fishing industry. For this reason, the term "fishing industry" will be used only to refer to the primary activity of catching and landing of fish.

3. The fishing industry, as any other, can affect an economy in a variety of ways. It can play an important role in the food supply. In Table I the countries are in order of the share of fish protein of the total protein supply; Table II refers to the importance of fish protein in total animal protein supply.

4. Section III deals with the importance of fish to the balance of payments. It identifies the net balance of trade in fishery products and compares the relative importance of fishery exports or imports with total commodity trade. Tables III and IV are divided into two groups: IIIa and IVa, the "Net Exporters", IIIb and IVb, the "Net Importers". The Tables III compare the fish export with the total national export, while the Tables IV compare the fish import with the total imports of the countries. Fishery exports are seen to be vital (more than 40 per cent of total export) for six countries, of which three are developing countries, and to be important for a further 12 countries, of which ten are developing countries. In Table IVb it is interesting to note that the import of fishery products has not a major impact on the payments position of the "Net Importers".

5. Section IV identifies the role of the fishing industry in employment. In this section many of the figures are subject to a considerable degree of error; the ordering of the table, however, should not change with a greater statistical refinement. Table V is ordered by the share of fishermen of the "Total Economically Active Population"; in Table VI the share of fishermen in the "Population Working in Agriculture" is given.

6. Section V discusses the influence of the fishing industry on the creation and expansion of other industries. Reference has already been made in paragraph 2 above. No quantitative estimates are made, although some economists suggest that in a developed market economy the catching and landing of fish might represent only the 15 or 20 per cent of the value of the final product.

7. Section VI gives a statistical comparison of the landed value of fish with the Gross Domestic Product (Table VII) and with the Agricultural GDP (Table VIII). This is, of course, not the whole share of the fishing industry in the GDP, but as the domestic fisheries product is unknown, these tables might give a rough idea of the importance of the fishing industry for the national economy.

8. In the Annex of the paper, the food supply figures are given in alphabetical order in Table A for easy consultation.

II. THE ROLE OF FISHERIES IN BALANCED ECONOMIC DEVELOPMENT - FISH AS FOOD

9. Probably the most important role of the fishing industry in most countries, especially developing countries, is as a source of domestically produced food. If the growth of domestic supplies of food fails to keep pace with the growth of demand for food, the import of food will tend to rise (or food prices will rise with unfortunate social consequences), or if the country is an exporter exports will fall. Greater difficulty will, therefore, be experienced in financing the import of goods other than food, including capital goods, intermediate products and raw materials essential for development.

10. Fish also has an important role to play in a number of countries as a major source of animal protein (Table II). In more than 20 countries, fish represents more than 40 per cent of the total supply of animal protein, and more than 10 per cent of the total protein supply (Table I). Those countries which have a high fish percentage in animal protein (over 40 per cent) and a relatively lower share of fish in total protein (under 10 per cent) (Indonesia, Bangladesh, Philippines, Malawi, Burma, Sri Lanka, Kampuchea Dem., Togo, Nigeria) are those countries which reveal a heavy dependence on rice or starchy roots with a consequently unfavourable calorie/protein ratio. In these countries, fish is very important in helping to correct this imbalance, often it is the only way to increase the supply of animal protein.

11. It is interesting to observe that the countries in which fish is an important source of food are not in any way characterised by a particular stage of economic development, and that the structure of their fisheries shows great variety ranging from the highly capital intensive fisheries of Iceland to the rather labour intensive fisheries of the People's Democratic Republic of Yemen or Burma.

Table I

Relative Importance of Fish in Food Supply
(compared with Total Protein Supply)

Countries	Fish as % of total protein supply 1974-76	Fish as % of total animal protein supply 1974-76	Per Caput Consumption 1976 kg p.a.		Protein Per Caput Per Day Gram 1974-76	
			Fish	Meat	Fish	Meat
	1	2	3	4	5	6
1. Japan	27.9	55.2	64.1	24.9	23.0	8.8
2. Philippines	22.6	58.2	33.1	15.7	11.4	5.5
3. Ghana	20.2	65.9	27.6	9.4	9.5	4.1
4. Congo	18.4	61.3	24.9	9.2	7.3	3.9
5. Hong Kong	18.1	31.2	50.5	72.3	14.7	25.3
6. Senegal	17.4	58.9	40.5	13.4	11.3	5.3
7. Malaysia	17.0	47.3	34.7	13.4	9.5	4.7
8. Sierra Leone	16.6	71.8	26.8	5.3	7.4	2.0
9. Yemen, People's Dem. Rep.	16.5	52.1	42.5	10.4	8.8	3.8
10. Iceland	15.7	20.0	70.0	34.9	17.8	29.9
11. Singapore	15.2	31.6	42.4	47.4	12.4	16.3
12. Korea Rep.	14.8	70.6	47.2	7.2	10.8	2.5
13. Viet Nam	14.0	56.3	21.8	13.1	7.2	4.3
14. Ivory Coast	13.5	49.3	21.1	15.1	7.3	6.3
15. Thailand	13.2	52.8	22.6	11.4	6.6	4.1
16. Denmark	12.5	19.2	30.0	70.8	11.3	22.4
16a. Suriname	11.8	31.3	22.0	29.4	7.0	9.2
17. Korea Dem. Rep.	11.7	68.4	35.4	8.3	9.1	2.8
17a. Portugal	10.9	26.8	38.6	45.2	10.6	17.6
18. Guyana	10.6	28.6	20.9	23.5	6.1	8.9
19. Spain	10.3	20.5	35.9	60.1	9.8	21.2
20. Liberia	9.9	43.2	20.8	10.4	4.1	4.2
21. Norway	9.8	15.3	26.5	52.5	8.7	18.4
22. Sweden	9.5	14.4	32.3	62.7	8.7	20.4
23. USSR	9.3	18.7	28.7	54.6	9.5	20.3
24. Mauritius	9.1	29.9	15.7	11.1	5.0	4.2
25. Finland	8.9	13.8	26.1	57.9	8.2	20.1
26. Cuba	8.6	17.5	20.4	35.7	6.0	13.6
27. Mauritania	8.5	17.5	20.9	25.7	5.5	10.0
28. Kampuchea, Dem.	8.4	47.8	9.9	8.8	3.2	3.1
29. Sri Lanka	8.4	54.7	10.9	2.7	3.5	0.8
30. Indonesia	8.3	63.6	10.4	3.4	3.5	1.5
31. Bangladesh	7.9	58.9	10.8	3.4	3.3	1.3
32. Uganda	7.7	35.5	14.8	11.8	4.3	5.0
33. Burma	7.5	55.3	13.6	6.2	4.2	2.1
34. Chad	7.5	34.7	15.0	12.6	4.2	5.6
35. Tanzania	7.5	27.2	15.4	12.9	3.7	5.4
36. Togo	7.5	45.9	11.5	9.4	3.4	3.7
37. Benin	6.9	37.9	11.2	11.7	3.3	4.7
38. Peru	6.6	19.4	17.2	24.4	3.9	9.3
39. Cameroon	6.4	38.0	10.4	12.7	3.8	5.1
40. Poland	6.4	11.8	20.6	70.3	7.0	23.3

Table I (continued)

Countries	Fish as % of total protein supply 1974-76	Fish as % of total animal protein supply 1974-76	Per Caput Consumption 1976 kg/p.a.		Protein Per Caput Per Day/Gram 1974-76	
			Fish	Meat	Fish	Meat
41. Zambia	6.2	28.9	12.3	15.8	3.7	6.4
42. China	5.9	28.3	5.9	21.2	3.4	6.8
43. Germany, Dem. Rep.	5.9	10.2	18.7	82.9	5.8	29.0
44. Zaire	5.9	28.9	6.3	20.6	2.2	5.1
45. Nigeria	5.8	40.3	11.0	8.4	2.9	3.3
46. Malawi	5.4	57.6	12.7	5.3	3.8	1.8
47. Angola	5.3	23.2	6.7	13.0	2.3	5.2
48. Venezuela	5.3	10.6	10.5	44.1	3.3	16.3
49. UK	5.2	8.6	17.8	73.0	4.8	26.3
50. Mali	5.1	25.2	10.9	13.6	2.7	5.5
51. France	5.0	7.8	22.2	91.9	5.1	34.4
52. Trinidad & Tobago	4.9	11.7	10.1	33.6	3.2	12.7
53. Greece	4.6	10.0	15.7	59.4	4.8	22.2
54. Netherlands	4.6	7.3	13.1	72.9	4.1	24.9
55. Germany, Fed. Rep.	4.5	7.1	10.9	84.1	3.9	28.4
56. Belgium - Luxembourg	4.4	7.2	18.3	91.6	4.4	32.4
57. Brazil	4.4	11.5	7.2	33.4	2.7	12.6
58. Chile	4.2	11.3	15.8	37.9	3.1	13.5
59. Italy	4.1	9.0	12.8	62.8	4.0	23.9
60. Canada	4.0	6.2	18.2	101.3	4.0	36.4
61. Central African Rep.	3.8	17.4	5.8	17.4	1.6	7.2
62. Ecuador	3.8	9.8	10.4	19.3	1.8	7.3
63. Malta	3.8	7.9	13.3	56.7	3.4	19.6
64. South Africa	3.8	10.4	7.3	39.1	2.9	15.0
65. Australia	3.5	5.2	14.6	116.3	3.6	42.0
66. Bulgaria	3.5	9.3	12.0	57.0	3.6	20.6
67. USA	3.5	5.3	15.4	114.3	3.8	41.9
68. Madagascar	3.4	15.5	6.1	24.5	2.0	10.1
69. Dominican Rep.	3.3	9.5	6.2	18.1	1.4	6.5
70. Israel	3.3	6.3	11.1	65.2	3.4	26.0
71. Lao	3.3	19.4	6.2	17.4	1.8	5.7
72. Libya	3.0	9.3	7.5	31.6	2.2	12.4
73. Switzerland	3.0	4.7	10.4	77.7	2.6	26.9
74. Ireland	2.9	4.8	14.2	90.9	3.1	33.2
75. New Zealand	2.8	4.0	16.9	114.8	3.1	41.1
75a. Panama	2.7	6.1	5.1	40.3	1.8	17.0
76. Guinea	2.6	25.6	4.7	5.6	1.1	2.2
77. Czechoslovakia	2.4	4.1	7.9	85.3	2.3	30.6
78. Romania	2.4	6.3	5.7	55.2	2.4	20.1
79. Colombia	2.3	5.3	3.4	29.3	1.1	11.3
80. Costa Rica	2.3	5.2	4.5	21.3	1.3	9.1

Table I (continued)

Countries	Fish as % of total protein supply 1974-76	Fish as % of total animal protein supply 1974-76	Per Caput Consumption 1976 kg/p.a.		Protein Per Caput Per Day/Gram 1974-76	
			Fish	Meat	Fish	Meat
81. India	2.3	22.4	3.4	1.5	1.1	0.6
82. Saudi Arabia	2.3	8.1	5.3	23.5	1.3	7.9
83. Tunisia	2.2	10.3	5.3	19.4	1.6	7.3
84. Austria	2.0	3.4	7.8	79.1	1.8	27.1
85. Nicaragua	2.0	5.0	4.3	28.6	1.4	11.9
86. Burundi	1.9	26.8	4.9	5.3	1.1	1.9
87. Turkey	1.9	8.6	4.5	21.0	1.6	8.1
88. Mexico	1.8	5.9	4.8	23.4	1.2	9.1
89. Cyprus	1.7	4.2	6.3	63.9	1.6	22.0
90. Morocco	1.7	12.6	4.5	12.7	1.2	5.0
91. Yemen, Arab Rep.	1.5	8.7	3.7	14.7	1.0	5.4
92. Argentina	1.4	2.1	4.0	115.4	1.5	52.5
93. Egypt	1.4	9.5	4.4	13.1	1.0	5.0
94. Lebanon	1.4	5.8	3.2	23.3	0.9	8.2
95. Uruguay	1.4	2.3	5.0	111.9	1.0	38.7
96. Hungary	1.3	2.8	5.0	77.8	1.2	27.3
97. Iraq	1.3	6.5	2.8	14.9	0.8	5.2
98. Algeria	1.2	6.4	2.3	9.0	0.7	3.3
99. Jordan	1.2	5.5	2.1	10.8	0.5	3.7
100. Kenya	1.1	5.0	2.8	18.7	0.7	7.6
101. Mozambique	1.1	9.3	1.9	7.8	0.4	2.9
102. Yugoslavia	1.1	3.3	3.0	48.1	1.1	17.9
103. El Salvador	0.9	3.1	2.1	12.7	0.5	5.4
104. Bolivia	0.8	2.6	1.9	31.4	0.4	12.1
105. Albania	0.7	2.6	1.7	24.9	0.5	9.3
106. Haiti	0.7	4.7	1.8	10.8	0.3	4.2
107. Sudan	0.6	2.3	1.5	25.4	0.4	9.2
108. Niger	0.5	3.2	0.8	12.7	0.3	5.1
109. Pakistan	0.5	1.9	1.4	9.1	0.3	3.4
110. Guatemala	0.4	1.7	0.9	12.2	0.2	4.9
111. Honduras	0.4	1.5	1.1	12.6	0.2	5.3
112. Paraguay	0.4	1.1	1.0	62.8	0.3	22.7
113. Syria	0.4	2.2	1.5	16.3	0.3	5.7
114. Ethiopia	0.3	1.8	0.8	19.5	0.2	7.9
115. Somalia	0.3	0.5	1.4	61.3	0.2	24.1
116. Upper Volta	0.3	4.1	1.0	8.0	0.2	3.2
117. Rwanda	0.2	3.7	0.3	5.3	0.1	2.0
118. Iran	0.1	0.7	0.5	19.5	0.1	7.4

Sources: The first, second, fifth and sixth columns are taken from unpublished material, AT 2000, FAO, Rome.

The third and fourth column are taken from the Food Balance Sheets 1975-77, FAO, Rome.

Table II

Relative Importance of Fish in Food Supply
(Compared with Total Animal Protein Supply)

Countries	Fish as % of total animal protein supply 1974-76	Fish as % of total protein supply 1974-76	Per Caput Consumption 1976 kg p.a.	
			Fish	Meat
1. Sierra Leone	71.8	16.6	26.8	5.3
2. Korea Rep.	70.6	14.8	47.2	7.2
3. Korea Dem. Rep.	68.4	11.7	35.4	8.3
4. Ghana	65.9	20.2	27.6	9.4
5. Indonesia	63.6	8.3	10.4	3.4
6. Congo	61.3	18.4	24.9	9.2
7. Bangladesh	58.9	7.9	10.8	3.4
8. Senegal	58.9	17.4	40.5	13.4
9. Philippines	58.2	22.6	33.1	15.7
10. Malawi	57.6	5.4	12.7	5.3
11. Viet Nam	56.3	14.0	21.8	13.1
12. Burma	55.3	7.5	13.6	6.2
13. Japan	55.2	27.9	64.1	24.9
14. Sri Lanka	54.7	8.4	10.9	2.7
15. Thailand	52.8	13.2	22.6	11.4
16. Yemen, People's Dem. Rep.	52.1	16.5	42.5	10.4
17. Ivory Coast	49.3	13.5	21.1	15.1
18. Kampuchea, Dem.	47.8	8.4	9.9	8.8
19. Malaysia	47.3	17.0	34.7	13.4
20. Togo	45.9	7.5	11.5	9.4
21. Liberia	43.2	9.9	20.8	10.4
22. Nigeria	40.3	5.8	11.0	8.4
23. Cameroon	38.0	6.4	10.4	12.7
24. Benin	37.9	6.9	11.2	11.7
25. Uganda	35.5	7.7	14.8	11.8
26. Chad	34.7	7.5	15.0	12.6
27. Singapore	31.6	15.2	42.4	47.4
28. Suriname	31.3	11.8	22.0	29.4
29. Hong Kong	31.2	18.1	50.5	72.3
30. Mauritius	29.9	9.1	15.7	11.1
31. Zaire	28.9	5.9	6.3	20.6
32. Zambia	28.9	6.2	12.3	15.8
33. Guyana	28.6	10.6	20.9	23.5
34. China	28.3	5.9	5.9	21.2
35. Tanzania	27.2	7.5	15.4	12.9

Table II (continued)

Countries	Fish as % of total animal protein supply 1974-76	Fish as % of total protein supply 1974-76	Per Caput Consumption 1976 kg p.a.	
			Fish	Meat
36. Burundi	26.8	1.9	4.9	5.3
37. Guinea	25.6	2.6	4.7	5.6
38. Mali	25.2	5.1	10.9	13.6
39. Angola	23.2	5.3	6.7	13.0
40. India	22.4	2.3	3.4	1.5
41. Spain	20.5	10.3	35.9	60.1
42. Iceland	20.0	15.7	70.0	34.9
43. Lao	19.4	3.3	6.2	17.4
44. Peru	19.4	6.6	17.2	24.4
45. Denmark	19.2	12.5	30.0	70.8
46. USSR	18.7	9.3	28.7	54.6
47. Cuba	17.5	8.6	20.4	35.7
48. Mauritania	17.5	8.5	20.9	25.7
49. Central African Republic	17.4	3.8	5.8	17.4
50. Madagascar	15.5	3.4	6.1	24.5
51. Norway	15.3	9.8	26.5	52.5
52. Sweden	14.4	9.5	32.3	62.7
53. Finland	13.8	8.9	26.1	57.9
54. Morocco	12.6	1.7	4.5	12.7
55. Poland	11.8	6.4	20.6	70.3
56. Trinidad and Tobago	11.7	4.9	10.1	33.6
57. Brazil	11.5	4.4	7.2	33.4
58. Chile	11.3	4.2	15.8	37.9
59. Venezuela	10.6	5.3	10.5	44.1
60. South Africa	10.4	3.8	7.3	39.1
61. Tunisia	10.3	2.2	5.3	19.4
62. Germany, Dem.Rep.	10.2	5.9	18.7	82.9
63. Greece	10.0	4.6	15.7	59.4
64. Ecuador	9.8	3.8	10.4	19.3
65. Dominican Republic	9.5	3.3	6.2	18.1
66. Egypt	9.5	1.4	4.4	13.1
67. Bulgaria	9.3	3.5	12.0	57.0
68. Mozambique	9.3	1.1	1.9	7.8
69. Libya	9.3	3.0	7.5	31.6
70. Italy	9.0	4.1	12.8	62.8
71. Yemen Arab Rep.	8.7	1.5	3.7	14.7
72. UK	8.6	5.2	17.8	73.0
73. Turkey	8.6	1.9	4.5	21.0
74. Saudi Arabia	8.1	2.3	5.3	23.5
75. Malta	7.9	3.8	13.3	56.7

Table II (continued)

Countries	Fish as % of total animal protein supply 1974-76	Fish as % of total protein supply 1974-76	Per Caput Consumption 1976 kg p.a.	
			Fish	Meat
76. France	7.8	5.0	22.2	91.9
77. Netherlands	7.3	4.6	13.1	72.9
78. Belgium-Luxembourg	7.2	4.4	18.3	91.6
79. Germany, Fed. Rep.	7.1	4.5	10.9	84.1
80. Iraq	6.5	1.3	2.8	14.9
81. Algeria	6.4	1.2	2.3	9.0
82. Israel	6.3	3.3	11.1	65.2
83. Romania	6.3	2.4	5.7	55.2
84. Canada	6.2	4.0	18.2	101.3
85. Mexico	5.9	1.8	4.8	23.4
86. Lebanon	5.8	1.4	3.2	23.3
87. Jordan	5.5	1.2	2.1	10.8
88. Colombia	5.3	2.3	3.4	29.3
89. USA	5.3	3.5	15.4	114.3
90. Australia	5.2	3.5	14.6	116.3
91. Costa Rica	5.2	2.3	4.5	21.3
92. Kenya	5.0	1.1	2.8	18.7
93. Nicaragua	5.0	2.0	4.3	28.6
94. Ireland	4.8	2.9	14.2	90.9
95. Haiti	4.7	0.7	1.8	10.8
96. Switzerland	4.7	3.0	10.4	77.7
97. Cyprus	4.2	1.7	6.3	63.9
98. Czechoslovakia	4.1	2.4	7.9	85.3
99. Upper Volta	4.1	0.3	1.0	8.0
100. New Zealand	4.0	2.8	16.9	114.8
101. Rwanda	3.7	0.2	0.3	5.3
102. Austria	3.4	2.0	7.8	79.1
103. Yugoslavia	3.3	1.1	3.0	48.1
104. Niger	3.2	0.5	0.8	12.7
105. El Salvador	3.1	0.9	2.1	12.7
106. Hungary	2.8	1.3	5.0	77.8
107. Albania	2.6	0.7	1.7	24.9
108. Bolivia	2.6	0.8	1.9	31.4
109. Sudan	2.3	0.6	1.5	25.4
110. Uruguay	2.3	1.4	5.0	111.9

Table II(continued)

Countries	Fish as % of total animal protein supply 1974-76	Fish as % of total protein supply 1974-76	Per Caput Consumption 1976 kg p.a.	
			Fish	Meat
111. Syria	2.2	0.4	1.5	16.3
112. Argentina	2.1	1.4	4.0	115.4
113. Pakistan	1.9	0.5	1.4	9.1
114. Ethiopia	1.8	0.3	0.8	19.5
115. Guatemala	1.7	0.4	0.9	12.2
116. Honduras	1.5	0.4	1.1	12.6
117. Paraguay	1.1	0.4	1.0	62.8
118. Iran	0.7	0.1	0.5	19.5
119. Somalia	0.5	0.3	1.4	61.3

Sources: For the first and second column, unpublished data from AT 2000, FAO, Rome.

For the third and fourth column, Food Balance Sheets 1975-77, FAO, Rome.

III. FISH AND THE BALANCE OF PAYMENTS

12. Closely related to its role as a source of food, the fishing industry is, in some countries, an important source of foreign exchange. In a few cases fishery exports are vital to the existence of the economy - in the Maldives, Faroe Islands and Iceland, export of fishery products accounts for over 75 percent of the total value of commodity trade. In Greenland, Bermuda and Cape Verde, the importance of fish exports is rather high (more than 40.0 of total exports). For another six countries, fishery products account for more than ten percent of the value of all commodity trade.

13. It is interesting to compare Table III with that of the Fisheries Circular No. 314, Rome, 1973; export of fishery products has become more important for exporting countries, especially for the developing countries: in 1971 there were 12 countries with a percentage of fish export higher than 5 percent, in 1977/78 there are 23 countries, of which only 5 are not developing countries. For some countries, however, the importance of fish exports decreased: in Peru, fish exports had a share of 37 percent in 1971, which went down to 12.7 percent in 1978 due to the anchoveta-fishmeal crisis; also in Norway the fish export share is lower today, but this is due to the increase of total export of all commodities from Norway, which is 4 times the 1971 figure.

14. For 23 countries, of which 18 are developing countries, fishing is an important export industry and any marked change in the condition of supply and demand for the products which they export would have considerable repercussions on the economy generally. Nevertheless, in spite of the importance of fish and fishery products to the economies of these countries, only Norway, Denmark, Korea Rep., Iceland and Peru, have an important share of the total world trade, accounting together for a fourth of total fish export. On the other hand, the largest fish exporters, such as Canada, USA, Japan and the Netherlands, which also account for a fourth of total fish export, have a size and diversification of their economies, that fish exports are a negligible proportion of their total export trade: Canada, 2.0 percent; Japan 0.8 percent; Netherlands 0.8 percent; USA 0.6 percent.

15. Many countries are characterized by a substantial two-way trade and indeed a few net importing countries are also countries for which fishery exports represent a significant share of their total export trade, e.g., Fiji, Hong Kong, Singapore and Japan, or on the other hand net exporters with an important share of fish imports for their total import: Papua New Guinea, Bermuda, Denmark, Spain and Portugal.

16. It is interesting to note from Table IV that fish imports as a percent of total imports are not very significant for any country; only six net importers have a fish import share higher than 2.5 percent, among those Japan, which is the biggest importer in real terms. It is clear, however, that from the exchange point of view the most significant effect of the industry is felt in those countries which depend vitally on their fishery exports.

Table III

The Relative Importance of Trade in Fishery Products (Net Exporters)

Net Exporters	Year	Fish			Total Exports mill. US $	Fish Exports as a % of Total Exports
		Exports	Imports	Net Balance		
		'000 US $				
1. Maldives	1977	1 548	-	1 548	1	97.0
2. Faroe Islands	1978	135 699	158	133 070	141	96.2
3. Iceland	1978	497 650	1 267	496 383	659	75.5
4. Greenland	1977	48 358	482	47 876	92	52.6
5. Bermuda	1977	15 810	2 805	13 005	39	40.5
6. Cape Verde Islands	1977	702	99	603	2	40.0
7. Solomon Islands	1977	9 275	270	9 005	33	28.1
8. Mauritania	1978	25 549	123	25 426	119	21.5
9. Panama	1978	42 282	3 599[a]	3 868	242	17.5
10. Guinea-Bissau	1977	1 543	140	1 403	11	14.0
11. Peru	1978	252 385	204[a]	252 181	1 949	12.9
12. Senegal	1977	63 435	6 260	57 175	622	10.2
13. Mozambique	1976	12 560	4 218	8 342	150	8.4
14. Norway	1978	756 337	32 185	724 152	10 026	7.5
15. Chile	1978	171 339	2 369[a]	168 970	2 408	7.1
16. Yemen, People's Dem. Rep.	1976	11 774	4	11 770	175	6.7
17. Denmark	1978	727 855	221 097	506 758	11 883	6.1
18. Thailand	1978	246 808	6 654	240 154	4 085	6.0
19. Ecuador	1977	91 000	13	90 087	1 516	6.0
20. Gambia	1978	2 247	255	1 992	38	5.9
21. Morocco	1978	89 569	177	89 392	1 508	5.9
22. Seychelles	1976	506	88	418	9	5.6
23. Korea	1978	639 363	42 468	596 895	12 711	5.0
24. Madagascar	1976	12 932	218	12 714	275	4.7
25. Papua New Guinea	1978	33 000	21 400	11 600	733	4.5
26. Suriname	1976	11 890	1 224	10 666	274	4.3
27. Mexico	1978	250 676	30 821	219 855	5 958	4.2
28. Nicaragua	1976	22 170	1 142	21 028	542	4.0
29. India	1978	258 835	280	258 555	6 619	3.9
30. Portugal	1978	86 323	64 603	21 720	2 430	3.6
31. Macau	1977	8 069	4 777	3 292	241	3.3
32. Uruguay	1978	22 498	996[a]	21 502	688	3.3
33. Honduras	1977	15 228	1 532	13 696	513	3.0
34. Bangladesh	1978	16 113	121	15 992	545	3.0
35. Spain	1978	281 041	245 679	35 362	13 115	2.1
36. Argentina	1978	136 000	9 900	126 100	6 399	2.1
37. Malaysia (Pen.)	1978	125 384	44 226	81 158	5 937	2.1
38. Canada	1978	981 222	216 414	764 808	48 122	2.0
39. Philippines	1978	63 274	31 511	31 763	3 333	1.9
40. Cuba	1977	65 203	35 741	29 462	3 537	1.8

Table III (continued)

	Net Exporters	Year	Fish			Total Exports mill. US $	Fish Exports as % of Total Exports
			Exports	Imports	Net Balance		
			'000 US $				
41.	Sri Lanka	1978	14 880	1 264[a]	13 616	845	1.8
42.	Guyana	1978	4 990	10	4 980	295	1.7
43.	New Zealand	1978	63 689	10 739	52 950	3 738	1.7
44.	Mali	1978	1 554	55	1 499	94	1.6
45.	Indonesia	1977	153 126	8 975	144 150	10 853	1.4
46.	Burma	1976	2 519	2	2 517	196	1.3
47.	Australia	1978	165 743	137 452	28 291	14 390	1.2
48.	Malaysia (Sabah)	1977	13 148	4 208	8 940	1 100	1.2
49.	Tunisia	1977	10 135	764	9 371	929	1.1
50.	Malaysia (Sarawak)	1977	9 364	5 495	3 869	874	1.1
51.	Ireland	1978	59 600	27 399	32 201	5 683	1.0
52.	El Salvador	1977	9 780	2 395	7 385	967	1.0
53.	South Africa	1978	108 315	22 691	85 624	12 875	0.8
54.	Turkey	1978	18 155	500	17 656	2 288	0.8
55.	Netherlands	1978	399 559	327 078	72 481	50 139	0.8
56.	Brazil	1978	83 058	71 641	11 417	12 659	0.7
57.	Costa Rica	1977	5 776	1 546	4 230	828	0.7
58.	Malawi	1977	1 159	281	878	200	0.6
59.	USSR	1978	237 221	43 391	193 830	52 216	0.5
60.	Bahamas	1977	8 751	1 654	7 097	2 605	0.3
61.	Bulgaria	1978	13 800	12 840	960	7 483	0.2
62.	Bahrain	1977	2 484	1 597	887	1 845	0.1

Sources: International Financial Statistics, Vol. XXXII, No. 12, Dec. 1979, IMF, Washington, Yearbook of Fishery Statistics, Vol. 47, 1978.

Table IV

The Relative Importance of Trade in Fishery Products (Net Importers)

Net Importers	Year	Fish			Total Imports mill. US$	Fish Imports as a % of Total Imports
		Exports	Imports	Net Balance		
		'000 US$				
1. Réunion	1977	853	8 417	-7 564	114	7.4
2. Dominica	1976	-	565	-565	12	4.8
3. Japan	1978	748 786	3 041 606	-2 292 820	78 731	3.9
4. Fiji	1978	10 036	11 838	-1 802	355	3.3
5. St. Vincent	1977	94	354	-260	12	3.0
6. Congo	1977	-	4 231	-4 231	163	2.6
7. Jamaica	1976	36	19 368	-19 332	913	2.1
8. Martinique	1976	-	7 756	-7 756	414	1.9
9. Hong Kong	1978	156 631	254 873	-98 242	13 452	1.9
10. Ivory Coast	1977	22 100	31 731	-9 631	1 756	1.8
11. Togo	1976	6	3 364	-3 358	186	1.8
12. Mauritius	1977	4 816	8 001	-3 158	501	1.6
13. Nigeria	1976	1 946	122 846	-120 900	8 213	1.5
14. Dominican Republic	1978	1 100	14 451	-13 351	1 018	1.4
15. Colombia	1978	20 290	38 250	-17 960	2 928	1.3
16. Guadeloupe	1977	59	4 749	-4 690	376	1.3
17. St. Kitts, etc.	1977	157	258	-101	22	1.2
18. Saint Lucia	1976	17	633	-616	51	1.2
19. Sweden	1978	62 278	245 717	-183 439	20 585	1.2
20. USA	1978	897 261	2 225 946	-1 328 685	183 137	1.2
21. Brunei	1978	47	2 668	-2 621	276	1.0
22. Central African Republic	1977	-	599	-599	63	1.0
23. France	1978	214 514	844 410	-629 896	81 795	1.0
24. French Polynesia	1976	31	2 881	-2 850	295	1.0
25. Italy	1978	71 430	542 307	-470 877	56 459	1.0
26. Finland	1978	2 571	67 494	-64 923	7 866	0.9
27. Sierra Leone	1976	3	1 404	-1 401	155	0.9
28. UK	1978	284 721	692 769	-408 048	78 557	0.9
29. Egypt	1978	431	54 400	-53 969	6 727	0.8
30. Haiti	1977	651	1 688	-1 037	225	0.8
31. Liberia	1978	2 573	3 229	-656	400	0.8
32. Singapore	1978	77 142	104 273	-27 131	13 049	0.8
33. Cameroon	1977	4 420	5 575	-1 155	784	0.7
34. Czechoslovakia	1977	2 608	73 064	-70 456	11 187	0.7
35. Gabon	1977	759	6 187	-5 428	831	0.7
36. Switzerland	1978	2 747	172 983	-170 236	23 804	0.7
37. Belgium	1978	62 410	301 277	-238 867	48 728	0.6
38. Cyprus	1978	-	4 886	-4 886	758	0.6
39. Germany, Fed. Rep.	1978	235 099	766 262	-531 163	121 754	0.6
40. Greece	1978	14 307	47 411	-33 104	7 648	0.6

Table IV (continued)

Net Importers	Year	Fish			Total Imports mill. US$	Fish Imports as a % of Total Imports
		Exports	Imports	Net Balance		
		'000 US$				
41. Malta	1977	2	3 276	-3 274	516	0.6
42. Tanzania a/	1976	845	4 078	-3 233	638	0.6
43. Yugoslavia	1978	26 919	63 521	-36 602	9 987	0.6
44. Barbados	1977	1 052	1 459	-407	273	0.5
45. Burundi	1977	7	336	-329	74	0.5
46. Hungary	1978	8 073	36 956	-28 883	7 902	0.5
47. Poland	1977	46 256	76 129	-29 873	14 616	0.5
48. Austria	1978	1 735	71 517	-69 782	16 019	0.4
49. Jordan	1977	246	5 504	-5 258	1 381	0.4
50. Israel	1978	3 077	21 075	-17 998	7 403	0.3
51. Trinidad and Tobago	1977	883	4 563	-3 680	1 809	0.3
52. Iran	1976	3 453	19 563	-15 874	12 894	0.2
53. Kenya	1978	1 150	3 043	-1 893	1 711	0.2
54. Kuwait	1977	7 071	11 192	-4 121	4 840	0.2
55. Neth. Antilles	1977	68	4 706	-4 638	3 128	0.2
56. Saudi Arabia	1977	1 447	24 203	-22 756	14 656	0.2
57. Syria	1977	114	5 301	-5 187	2 658	0.2
58. Zambia	1977	9	1 817	-1 808	828	0.2
59. Algeria	1977	1 653	7 484	-5 831	7 125	0.1
60. Rwanda	1977	-	149	-149	114	0.1
61. Venezuela	1977	12 529	13 037	-508	11 446	0.1
62. Iraq	1977	34	972	-938	4 052)	less
63. Libya	1977	13	838	-825	3 782)	than
64. Sudan	1977	17	57	-40	1 059)	0.1

Sources: International Financial Statistics, Vol. XXXII, No. 12, Dec. 1979, IMF, Washington

Yearbook of Fishery Statistics, Vol. 47, 1978

Footnote: a/ Excluding trade with Uganda and Kenya

IV. THE FISHING INDUSTRY AS A SOURCE OF EMPLOYMENT

17. Table V attempts to quantify the role of the fishing industry in general employment creation; Table VI shows its importance for the agricultural employment which could be more significant than Table V. The data have been drawn largely from returns made to ILO and FAO, in some cases estimates were made based on the labour intensity and the catch structure. Many of the figures are subject to a considerable degree of error, but it is unlikely that statistical refinement would produce a very different ordering of countries.

18. The data, however, require some caution in interpretation. Countries in which fishing is a significantly important proportion of the economically active population cover a range of economies at very different stages of development. The fisheries of Iceland, Greenland and the Faroe Islands are highly capitalised and characterized by high productivity. In other countries the numbers are high because the industry makes little or no use of modern technology and productivity per man is about one ton or less compared with over 100 tons per person in Iceland. Since there are such wide divergencies in capital intensity between countries, employment cannot be taken as an index of "importance" of the industry in a wider sense.

19. A characteristic feature of employment in the fishing industry is the prevalance of occasional employment - defined as employment accounting for less than 30 percent of the total time worked, or from which is derived less than 30 percent of total earnings. This is particularly a feature of fishing in riverine waters, where activity varies with the seasonal flow of water, although it is also common in marine fisheries, particularly those based on migratory species. The percentages given in Tables V and VI, which make international comparison of the relative significance of fishing as a source of employment, have been calculated on the basis of total employment, including occasional fishermen who derive a major part of their livelihood from other occupations.

20. For eight countries the importance of employment in fishery is higher than 10 percent, but most of them are small islands where the quota of occasional fishermen is rather high (Maldives, Solomon Islands, Antigua, Tonga); for the other fourteen countries the share of fishermen in the total employment is higher than five percent. It is interesting to see that the share of fishermen in the population engaged in agriculture is high for all important fishing nations. The Maldives and other smaller islands are missing from this Table as the figures for their agricultural active population are not available, but, of course, for those islands with a high share in Table V, also the one in Table VI would be very high (about 90 percent). About 20 countries have more than 10 percent of their active population in agriculture working in the fishing industry, in some six countries the share is even higher than one-third. It is interesting to note that also in some industrialized countries the share of fishermen in the agricultural population is rather high: Canada 12.3 percent, Japan 6.9 percent, USA 6.5 percent, UK 3.8 percent, USSR 3.7 percent.

21. Unfortunately it is not possible to make any detailed division of employment between types of fishing or by area fished. Nevertheless, the greater part of the employment in all countries is generated by either freshwater or coastal fisheries. Summing up all figures, always considering the statistical errors and also that some countries are missing from this list, there are 16 million fishermen all over the world of whom about 10 million are marine fishermen and 6 million inland fishermen. Compared with the 1971 figures there was an increase of fishermen from developing countries, such as India, Indonesia, Philippines, Bangladesh and Burma, and a decrease in the countries with a highly capital intensive fishery such as Faroe Islands -40 percent, Netherlands -35 percent, Norway, -20 percent, Germany,Fed., -20 percent, etc.

22. Comparing Tables V and VI with Table III in the previous paper, however, no bigger changes of position are noted. It is interesting, however, that the share of fishermen in the important fishing countries such as Faroe Islands, Greenland, Iceland, went down because of the high capitalisation of their industries. Of course in these countries the indirect economic effects will be higher than in the labour intensive countries. Section V deals with these indirect economic effects.

Table V

Primary Employment in the Fishing Industry Compared with Economically Active Population

Country	Year	Number of Fishermen					Economically Active Population	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
1. Maldives	1978	22 683	–		22 683	...	56	40.5
2. Solomon Isl.	1978	21 516	–		21 516	1 571	57	37.7
3. Faroe Isl.	1978	3 327	–		3 327	2 100	16	21.0
4. Antigua	1976	4 500	–		4 500	2 800	25	18.0
5. Tonga	1978	2 929	–		2 929	1 012	23	12.7
6. Oman	1978	25 000	–		25 000	...	219	11.4
7. Greenland	1976	2 419	–		2 419	...	21	11.3
8. Saint Lucia	1977	3 000	–		3 000	1 800	32	9.4
10. Chad	1974	–	120 000		120 000	5 000	1 500	8.0
11. St. Vincent	1978	2 800	–		2 800	1 060	35	8.0
12. St. Pierre & Miquelon	1978	140	–		140	31	2	6.5
13. St. Kitts	1978	900	–		900	...	14	6.4
14. Dominica	1978	1 500	–		1 500	...	24	6.3
15. Grenada	1978	1 857	–		1 857	1 389	30	6.2
16. Philippines	1978			972 151	972 151	902 151	16 133	6.0
17. Kiribati	1978	1 020	–		1 020	370	18	5.7
18. Iceland	1977	5 319	–		5 319	4 199	96	5.5
19. Samoa	1977	2 000	–		2 000	500	39	5.1
20. Seychelles	1977	1 300	–		1 300	835	26	5.0
21. Bangladesh	1978			1 028 970	1 028 970	585 410	22 247	4.6
22. Benin	1977	3 300	64 100		67 400	38 300	1 530	4.4
23. Montserrat	1977	200	–		200	55	5	4.3
24. Mauritania	1977			19 500	19 500	7 000	461	4.2
25. Belize	1975	1 625	–		1 625	1 200	41	4.0
26. Cape Verde Isl.	1977	3 126	–		3 126	...	92	3.4
27. Indonesia	1977	721 383	887 311		1 608 694	825 650	49 182	3.3
28. Bahamas	1978	3 000	–		3 000	1 000	91	3.3
29. Yemen Peop. Dem. Rep.	1977	14 000	–		14 000	...	422	3.3
30. Burma	1978			355 201	355 201	151 181	13 062	2.7
31. Mali	1976	–	80 416		80 416	...	3 202	2.5
32. Guyana	1978	6 374	–		6 374	4 818	270	2.4
33. Malaysia	1978			107 586	107 586	89 115	4 479	2.4

Table V (continued)

Country	Year	Number of Fishermen					Economically Active Population	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
34. Korea, Rep. of	1977			302 449	302 449	57 010	13 434	2.3
35. Senegal	1975			46 586	46 586	...	2 135	2.2
36. Central African Rep.	1977	-	21 034		21 034	...	1 021	2.1
37. Tanzania	1977		145 000		145 000	75 000	6 808	2.1
38. New Caledonia	1976	1 000	-		1 000	260	50	2.0
39. Ghana	1978	60 866	20 000		80 866	...	4 002	2.0
40. Sierra Leone	1978			22 300	22 300	16 500	1 132	2.0
41. Bahrain	1978	1 500	-		1 500	...	77	1.9
42. Zambia	1978	-	38 000		38 000	18 000	2 027	1.9
43. Hong Kong	1978			37 000	37 000	...	2 021	1.8
44. Norway	1978	33 518	-		33 518	13 140	1 888	1.8
45. Somalia	1978	22 000	-		22 000	4 000	1 310	1.7
46. Viet Nam	1978	270 000	70 000		340 000	...	21 471	1.6
47. Nigeria	1978			430 117	430 117	301 082	26 301	1.6
48. Sri Lanka	1978	66 836	16 000		82 836	57 679	5 118	1.6
49. Barbados	1975	1 450	-		1 450	...	98	1.5
50. Congo	1978	1 121	5 879		7 000	977	493	1.4
51. Fr. Guyana	1977	331	-		331	81	23	1.4
52. Mauritius	1978	4 734	-		4 734	3 534	328	1.4
53. Thailand	1978			291 284	291 284	71 975	20 938	1.4
54. Tunisia	1977	22 550	-		22 550	...	1 676	1.3
55. Greece	1973			46 500	46 500	31 500	3 946	1.2
56. Madagascar	1978	10 000	40 000		50 000	...	4 328	1.2
57. Bermuda	1978	360	-		360	70	29	1.2
58. Martinique	1978	1 406	-		1 406	...	117	1.2
59. St. Helena	1978	24	-		24	14	2	1.2
60. Brunei	1978			840	840	528	77	1.1
61. Gambia	1978			3 000	3 000	903	263	1.1
62. Brazil	1976	313 632	82 968		396 600	...	39 718	1.0
63. China	1978			4 300 000	4 300 000	...	410 739	1.0
64. Cameroon	1976	12 000	20 000		32 000	...	3 130	1.0
65. Colombia	1978			78 000	78 000	46 800	7 727	1.0
66. Pakistan	1977			217 173	217 173	122 522	20 718	1.0
67. Zaire	1977			113 710	113 710	57 680	11 092	1.0

Table V (continued)

Country	Year	Number of Fishermen					Economically Active Population	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
68. Ecuador	1977	21 840	-		21 840	18 951	2 393	0.9
69. Egypt	1978			92 000	92 000	85 000	10 077	0.9
70. Guadeloupe	1977	1 106	-		1 106	...	118	0.9
71. Malta	1978	1 074	-		1 074	372	117	0.9
72. Jamaica	1978	8 000	-		8 000	...	939	0.9
73. Japan	1978	478 148	...		(478 148)	286 326	55 320	0.9
74. Peru	1978	37 500	7 300		44 800	...	4 913	0.9
75. New Zealand	1978			9 623	9 623	6 300	1 272	0.8
76. Portugal	1978	32 341	3 619		35 960	...	4 226	0.8
77. Spain	1978			111 005	111 005	...	13 310	0.8
78. Trinidad & Tobago	1977	3 535	-		3 535	...	420	0.8
79. Uganda	1978	-	43 532		43 532	...	5 160	0.8
80. Canada	1978	65 433	8 600		74 033	...	10 900	0.7
81. Gabon	1978			1 862	1 862	1 757	258	0.7
82. Honduras	1978	6 370	223		6 593	4 681	991	0.7
83. Ireland	1978	8 620	50		8 670	2 865	1 164	0.7
84. Nicaragua	1978	4 650	608		5 258	3 418	737	0.7
85. Chile	1978	21 179	-		21 179	...	3 533	0.6
86. Denmark	1978			15 229	15 229	11 218	2 625	0.6
87. Ivory Coast	1978	18 500	2 500		21 000	...	3 668	0.6
88. Kenya	1972	3 500	26 400		29 900	...	4 945	0.6
89. Malawi	1978	-	13 664		13 664	9 236	2 386	0.6
90. Mozambique	1978	23 000	-		23 000	...	3 826	0.6
91. Suriname	1977			706	706	676	111	0.6
92. Togo	1976	500	5 740		6 240	4 720	973	0.6
93. USSR	1978			800 000	800 000	800 000[a/]	131 771	0.6
94. Botswana	1977	-	1 700		1 700	10	346	0.5
95. Cuba	1977			15 451	15 451	...	2 982	0.5
96. Fr. Polynesia	1977	250	-		250	250	46	0.5
97. India	1978	450 000	800 000		1 250 000	...	255 540	0.5
98. Lebanon	1978	4 000	-		4 000	...	818	0.5
99. Liberia	1978			3 250	3 250	2 550	626	0.5
100. Morocco	1978			23 275	23 275	...	5 034	0.5
101. Burundi	1978	-	7 177		7 177	...	1 841	0.4

Table V (continued)

Country	Year	Number of Fishermen					Economically Active Population	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
102. Costa Rica	1978	2 475	-		2 475	2 100	703	0.4
103. Dominican Rep.	1978	5 754	-		5 754	2 861	1 455	0.4
104. Mexico	1976			79 465	79 465	...	18 257	0.4
105. Panama	1976	2 500	-		2 500	...	582	0.4
106. Réunion	1978	599	-		599	...	154	0.4
107. Venezuela	1978			17 601	17 601	15 162	4 056	0.4
108. Australia	1977			19 209	19 209	...	6 925	0.3
109. Cyprus	1978	770	-		770	420	304	0.3
110. El Salvador	1977			3 732	3 732	2 634	1 358	0.3
111. Finland	1976			7 656	7 656	2 040	2 248	0.3
112. Guatemala	1977			5 300	5 300	2 300	1 785	0.3
113. Iraq	1973			7 755	7 755	...	2 636	0.3
114. Italy	1978			65 000	65 000	...	21 730	0.3
115. Niger	1976	-	7 567		7 567	4 000	2 390	0.3
116. Guinea	1977			5 000	5 000	...	2 112	0.2
117. Iran	1975			20 000	20 000	...	9 733	0.2
118. Israel	1978			2 852	2 852	1 287	1 258	0.2
119. Libya	1974	831	-		831	...	551	0.2
120. Saudi Arabia	1977	3 200	-		3 200	...	2 001	0.2
121. Singapore	1978			2 084	2 084	...	995	0.2
122. Sweden	1978			6 699	6 699	4 226	3 643	0.2
123. Syria	1978			2 620	2 620	2 025	2 024	0.2
124. United States	1975			168 013	168 013	...	94 479	0.2
125. Upper Volta	1975	-	5 450		5 450	450	3 033	0.2
126. Uruguay	1978			2 050	2 050	993	1 109	0.2
127. Yemen Arab Rep.	1977	3 800	-		3 800	2 000	1 578	0.2
128. Algeria	1978	3 930	-		3 930	3 410	3 905	0.1
129. Bolivia	1974	-	1 800		1 800	...	1 453	0.1
130. France	1978			28 852	28 852	25 999	22 500	0.1
131. Papua New Guinea	1978			1 524	1 524	...	1 468	0.1
132. Poland	1978	17 424	...		(17 424)	...	19 294	0.1
133. Puerto Rico	1978			1 168	1 168	945	969	0.1
134. South Africa	1976			10 500	10 500	...	9 379	0.1
135. Sudan	1976			5 500	5 500	3 000	4 924	0.1

Table V (continued)

Country	Year	Number of Fishermen					Economically Active Population	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
136. Turkey	1978			20 800	20 800	16 700	17 344	0.1
137. Yugoslavia	1977			14 564	14 564	3 786	10 087	0.1
138. Argentina	1976	3 126	995		3 221	...	10 224	)
139. Austria	1978	-	2 260		2 260	160	3 055	)
140. Belgium	1978	919	-		919	...	4 079	)
141. Czechoslovakia	1977	-	1 462		1 462	...	7 554	)
142. Ethiopia	1977			5 000	5 000	...	13 505	) less than
143. Germany, Fed. Rep.	1977			5 138	5 138	4 949	26 952	) 0.1
144. Hungary	1978	-	3 200		3 200	1 900	5 069	)
145. Jordan	1978	-	101		101	...	516	)
146. Netherlands	1978			3 604	3 604	...	5 338	)
147. Romania	1978	6 386	2 607		8 993	8 763	12 097	)
148. Rwanda	1977	-	1 252		1 252	...	2 376	)
149. Switzerland	1978	-	584		584	307	3 095	)
150. UK	1978	10 730	-		10 730	10 730	26 327	)

Sources: Yearbook of Labour Statistics, 1979, ILO, Geneva

FAO Production Yearbook, 1978

Unpublished material from Fisheries Information, Data and Statistics Service, Fisheries Department, FAO, Rome.

Footnote: a/ Of whom 160 000 employed in engineering and technical work

Table VI

Primary Employment in the Fishing Industry Compared with the Economically Active Population in Agriculture

Country	Year	Number of Fishermen					Economically Active Population in Agriculture	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
1. Faroe Isl.	1978	3 327	-		3 327	...	4	92.2
2. Greenland	1976	2 419	-		2 419	...	3	75.6
3. Hong Kong	1978			37 000	37 000	...	58	63.8
4. Solomon Isl.	1978	21 516	-		21 516	1 571	35	61.5
5. Iceland	1977	5 319	-		5 319	4 199	12	44.3
7. Seychelles	1977	1 300	-		1 300	835	5	26.0
8. Bahrain	1978	1 500	-		1 500	...	6	25.0
9. Norway	1978	33 518	-		33 518	18 140	160	20.9
10. Dominica	1978	1 500	-		1 500	...	8	18.8
11. Grenada	1978	1 857	-		1 857	1 389	10	18.6
12. Oman	1978	25 000	-		25 000	...	138	18.1
13. St. Vincent	1978	2 800	-		2 800	1 060	18	16.0
14. Philippines	1978			972 151	972 151	902 151	7 660	12.7
15. Belize	1975	1 625	-		1 625	1 200	13	12.5
16. Canada	1978	65 433	8 600		74 033	...	600	12.3
17. Malta	1978	1 074	-		1 074	372	6	11.9
18. Guyana	1978	6 374	-		6 374	4 818	62	10.3
19. Benin	1977	3 300	64 100		67 400	38 300	720	9.4
20. Chad	1974	-	120 000		120 000	5 000	1 310	9.2
21. Singapore	1978			2 084	2 084	...	24	8.7
22. Samoa	1977	2 000	-		2 000	500	24	8.3
23. Barbados	1975	1 450	-		1 450	...	18	8.1
24. New Zealand	1977			9 591	9 591	6 234	127	7.6
25. Denmark	1978			15 229	15 229	11 218	202	7.5
26. New Caledonia	1976	1 000	-		1 000	260	14	7.4
27. Martinique	1978			1 406	1 406	...	20	7.0
28. Japan	1978	478 148	...		(478 148)	286 326	6 915	6.9
29. Montserrat	1973	200	-		200	55	3	6.6
30. United States	1975			168 013	168 013	...	2 598	6.5
31. Cape Verde Isl.	1977	3 126	-		3 126	...	53	5.9

Table VI (continued)

Country	Year	Number of Fishermen					Economically Active Population in Agriculture	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
32. Bangladesh	1978			1 028 970	1 028 970	585 410	18 777	5.5
33. Indonesia	1977	721 383	887 311		1 608 694	825 650	30 090	5.3
34. Korea	1977	302 449	-		302 449	57 010	5 682	5.3
35. Yemen Peop. Dem. Rep.	1977	14 000	-		14 000	...	262	5.3
36. Trinidad & Tobago	1977	3 535	-		3 535	...	70	5.1
37. Burma	1978			355 201	355 201	151 181	7 000	5.0
38. Mauritania	1977	19 500	-		19 500	7 000	388	5.0
39. Malaysia	1978			107 586	107 586	89 115	2 210	4.9
40. Mauritius	1978	4 734	-		4 734	3 534	96	4.9
41. Australia	1977			19 209	19 209	...	398	4.8
42. Guadeloupe	1977	1 106	-		1 106	...	23	4.8
43. Spain	1978			111 005	111 005	...	2 516	4.4
44. Lebanon	1978	4 000	-		4 000	...	94	4.3
45. Congo	1978	1 121	5 879		7000	...	180	3.9
46. Ghana	1978	60 866	20 000		80 866	...	2 092	3.9
47. Jamaica	1978	8 000	-		8 000	...	209	3.8
48. UK	1978	22 168	-		22 168	16 449	579	3.8
49. USSR	1978			800 000	800 000	800 000[a/]	23 806	3.7
50. Colombia	1978			78 000	78 000	46 800	2 257	3.5
51. Ireland	1978	8 620	50		8 670	2 865	256	3.4
52. Surinam	1977	706	-		706	676	21	3.4
53. Sweden	1978			6 699	6 699	4 226	204	3.3
54. Portugal	1978	32 341	3 619		35 960	...	1 166	3.1
55. Chile	1978	21 179	-		21 179	...	687	3.1
56. Fiji	1976	2 409	-		2 409	250	80	3.0
57. Greece	1978			46 500	46 500	31 500	1 532	3.0
58. Israel	1978			2 852	2 852	1 287	93	3.0
59. Nigeria	1978			430 117	430 117	301 082	14 482	3.0
60. Sierra Leone	1978			22 300	22 300	16 500	752	3.0
61. Sri Lanka	1978	66 830	16 000		82 830	57 679	2 747	3.0
62. Puerto Rico	1978			1 168	1 168	945	40	2.9
63. Tunisia	1974	22 550	-		22 550	...	771	2.9
64. Mali	1976	-	80 416		80 416	...	2 841	2.8
65. Senegal	1975			46 586	46 586	...	1 647	2.8
66. Zambia	1978	-	38 000		38 000	18 000	1 377	2.8

Table VI (continued)

Country	Year	Number of Fishermen					Economically Active Population in Agriculture	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
67. Tanzania	1977			145 000	145 000	75 000	5 625	2.6
68. Brazil	1976	313 632	82 968		396 600	...	16 364	2.4
69. Italy	1978			65 000	65 000	...	2 716	2.4
70. Central African Rep.	1977	-	21 034		21 034	...	904	2.3
71. Peru	1978	37 500	7 300		44 800	...	1 907	2.3
72. Venezuela	1977			17 601	17 601	15 162	815	2.2
73. Viet Nam	1978	270 000	70 000		340 000	...	15 423	2.2
74. Finland	1976			7 656	7 656	2 040	360	2.1
75. Somalia	1978	22 000	-		22 000	4 000	1 068	2.1
76. Cuba	1977	15 451	-		15 451	...	756	2.0
77. Ecuador	1977	21 840			21 840	18 951	1 110	2.0
78. Pakistan	1977			217 173	217 173	122 522	11 402	1.9
79. Thailand	1978			291 284	291 284	71 975	15 978	1.8
80. China	1978			4 300 000	4 300 000	...	252 259	1.7
81. Egypt	1978			92 000	92 000	85 000	5 466	1.7
82. Nicaragua	1978	4 650	608		5 258	3 418	339	1.6
83. Uruguay	1978			2 050	2 050	993	139	1.5
84. Gambia	1977			3 000	3 000	903	208	1.4
85. Madagascar	1978	10 000	40 000		50 000	...	3 664	1.4
86. Zaire	1977			113 710	113 710	57 680	8 412	1.4
87. France	1977			28 852	28 852	25 999	2 250	1.3
88. Réunion	1978	599	-		599	...	46	1.3
89. Cameroon	1976	12 000	20 000		32 000	...	2 578	1.2
90. Mexico	1978			79 465	79 465	...	7 057	1.1
91. Netherlands	1978			3 604	3 604	...	310	1.1
92. Costa Rica	1978			2 475	2 475	2 100	256	1.0
93. Honduras	1978	6 370	223		6 593	4 681	628	1.0
94. Uganda	1978	-	43 532		43 532	...	4 230	1.0
95. Gabon	1978			1 862	1 862	1 757	200	0.9
96. Morocco	1978			23 275	23 275	...	2 631	0.9
97. Mozambique	1978	23 000	-		23 000	...	2 538	0.9
98. Togo	1976	500	5 740		6 240	4 720	682	0.9
99. Belgium	1978			914	914	...	118	0.8
100. India	1978	450 000	800 000		1 250 000	...	165 204	0.8
101. Austria	1978	-	2 260		2 260	160	309	0.7

Table VI (continued)

Country	Year	Number of Fishermen					Economically Active Population in Agriculture	
		Marine	Inland	Marine or inland	Total	of whom full-time	Total '000	% Employed in Fishing
102. Cyprus	1978	770	-		770	420	106	0.7
103. Dominican Rep.	1978			5 754	5 754	2 861	831	0.7
104. Ivory Coast	1978	18 500	2 500		21 000	...	2 951	0.7
105. Iraq	1973			7 755	7 755	...	1 186	0.7
106. Kenya	1972			29 900	29 900	...	4 005	0.7
107. Liberia	1978			3 250	3 250	2 550	444	0.7
108. Malawi	1978	-	13 664		13 664	9 236	2 026	0.7
109. Botswana	1977	-	1 700		1 700	10	285	0.6
110. Iran	1975			20 000	20 000	...	3 406	0.6
111. Libya	1974	831	-		831	...	132	0.6
112. Burundi	1978	-	7 177		7 177	...	1 539	0.5
113. El Salvador	1977			3 732	3 732	2 634	703	0.5
114. Guatemala	1977			5 300	5 300	2 300	1 013	0.5
115. Germany, Fed.Rep.,	1977			5 138	5 138	4 949	1 240	0.4
116. Hungary	1978	-	3 200		3 200	1 900	877	0.4
117. Niger	1976	-	7 567		7 567	4 000	2 153	0.4
118. South Africa	1976			10 500	10 500	...	2 769	0.4
119. Yugoslavia	1977			14 564	14 564	3 786	4 017	0.4
120. Guinea	1977			5 000	5 000	...	1 723	0.3
121. Poland	1978	17 424	...		(17 424)	...	6 174	0.3
122. Saudi Arabia	1977	3 200	-		3 200	...	1 240	0.3
123. Switzerland	1978	-	584		584	307	174	0.3
124. Syria	1978	2 620	-		2 620	2 025	992	0.3
125. Yemen Arab Rep.	1977	3 800	-		3 800	2 000	1 204	0.3
126. Algeria	1978	3 930	-		3 930	3 410	2 028	0.2
127. Argentina	1976	3 126	995		4 121	...	1 452	0.2
128. Bolivia	1974	-	1 800		1 800	...	773	0.2
129. Czechoslovakia	1977	-	1 462		1 462	...	905	0.2
130. Romania	1978	6 386	2 607		8 993	8 763	5 925	0.2
131. Turkey	1978			20 800	20 800	16 700	9 920	0.2
132. Upper Volta	1975	-	5 450		5 450	450	2 556	0.2
133. Papua New Guinea	1978	1 524	-		1 524	...	1 524	0.1
134. Sudan	1976			5 500	5 500	3 000	3 891	0.1
135. Jordan	1978	-	101		101	...	141	) less than
136. Rwanda	1977	-	1 252		1 252	...	2 156	) 0.1

a/ Including 160 000 employed in engineering and technical work, Sources as in Table V.

V. INDIRECT ECONOMIC EFFECTS OF THE FISHING INDUSTRY

23. The employment data given in Tables V and VI is that created directly by the fishing industry, narrowly defined as the catching of fish. The fishing industry, however, creates employment through those industries which supply inputs or utilise the output of fishing. Among the latter are fish processing industries and among the former such activities as boatbuilding, gear manufacture and the manufacture of processing equipment. It is, however, impossible to quantify in any detail the influence of the industry in this manner.

24. Perhaps the two most important indirect economic effects of the fishing industry are those to the boatbuilding and processing and distribution - these latter, while representing quite distinct functions, are in practice often inseparable activities. The employment effect of fishing in the processing and distribution sector varies due to the economy of the country. In developed countries with most fish production for human consumption the ratio appears to be about two processors and distributors to every fisherman. In the developing countries, on the other hand, the fishermen frequently process (and even sell) their own fish and for this reason, the employment created in the processing and distribution sector is negligible.

25. The ranges of the activity of shipbuilding is likewise almost as widespread as that of fishing itself and in nearly every country of the world vessels of some kind or other are constructed locally. As in the case of processing it is, however, difficult to derive any simple relationship between employment in the fishing industry and related employment in the boat building industry. As in all capital goods industries, activity in shipbuilding is highly cyclical, with feverish activity in the boom years of a fisheries' development, followed by a much lower level of output, say 15 to 20 percent of the peak, during the following years. It is, therefore, only possible to give a very rough indication of the labour which might be employed in shipbuilding as a result of demand from the fishing industry.

26. A modern purse seiner or trawler of 80 ft might be expected to have a useful working life of 17 years (although amortized in rather less). If one assumes a total national fleet of 300 such vessels, this means that at any one time some 17-18 vessels might be being replaced. The construction of such a vessel would require in direct labour from 10 to 15 man years and thus there might be continuous direct employment for 170 to 270 persons. Comparing this with the number of people who might be employed in operating the fleet suggests a ratio of about one shipbuilder to every seven fishermen. This is clearly no more than a rough approximation; it excludes indirect labour on trades ancilliary to shipbuilding, as well as any allowance for new building. On the other hand, in the most primitive fishing communities there may be very little division of labour, with the fisherman constructing his own canoe.

27. While the domestic building of vessels is a common characteristic of most fishing industries, the benefit to the balance of payments is modified by the need in most countries, especially those from the developing world, to import engines, winches, rigging and other hardware which would normally account for 40/50 percent of the total cost of the vessel. This is a point not without significance for the development of the fishing industry, and in a number of important cases mechanisation programmes have been frustrated by a shortage of foreign exchange. Shipbuilding is, however, a labour intensive industry and most countries are anxious to construct their own vessels.

28. The linkage effects of fishing to other industries is in most countries either more tenuous or less easy to define. Fishing gear, for example, which is a substantial and vital input to the fishing industry has rather less effect on most economies than might be expected. Since most gear is made from synthetic fibres, local manufacture of the basic raw material depend on the total market for synthetic fibres for all uses. Although the construction of the gear - possibly the most labour-intensive part of the whole operation - is normally carried out locally, most countries have to import the netting.

VI. FISHERIES OUTPUT AND GROSS DOMESTIC PRODUCT

29. Previous sections of this paper have given some indications of the relative international economic significance of fisheries. This last section tries to make a comparison of the fisheries output (the catch at ex-vessel prices) and the Gross Domestic Product (Table VII) and the Agricultural GDP (Table VIII). It should be kept in mind, however, that the gross value of fisheries output is, of course, not the domestic fisheries product but Table VII and Table VIII together with the Tables about employment in fisheries will give a proxy for the contribution of the fishing industry to the GDP.

30. It is interesting to note from Table VII that about ten countries have a share of fisheries output more than 4 percent of their GDP. They are almost all developing countries (Iceland apart), five are also MSA countries, showing the importance of the fishing industry for some developing countries. In this table Faroe Islands and Greenland are missing, but also in these countries the importance of the fishing industry for the GDP must be rather high.

31. In some ten countries, the fishing industry, calculated with the gross value of the fisheries output, represents more than 20 percent of the Agricultural GDP, adding the employment and the indirect effects of fisheries, with the result that in these countries, the fishing industry is one of the most important parts of the Agricultural GDP. In this Table there are missing other important fishing countries because either the gross value of fisheries output or the Agricultural GDP is not available, but there will be some other ten countries with fishing as one of the most significant agricultural activity.

32. The importance of fisheries in the developed market countries for the national Gross Domestic Product will be significantly higher than the share shown in Tables VII and VIII; calculating that the catching and landing of fish in these countries represents only about a fifth of the value of the final products. For the developing countries, however, these tables might be of some interest, as the ratio catch/processing is much higher.

Table VII

The Relative Importance of Fisheries Output for the National Economy (1978)

Country	Year	Gross Value of Fisheries Output (ex-vessel prices) (million U.S.$)	GDP at Purchaser's Value (million U.S.$)	Agricultural GDP (million U.S.$)	Fisheries Output as a % of the GDP at Purchaser's Value
1. Maldives	1978	7.0	22	8.7	31.80
2. Iceland	1977	217.0	1 922	n.a.	11.30
3. Cape Verde Islands	1976	4.2	43	9.0	9.77
4. Burma	1978	345.0	4 309	1 867.0	8.00
5. Senegal	1975	108.0	1 467	310.0	7.36
6. Philippines	1978	1 285.1	23 335	6 362.0	5.51
7. Bangladesh	1977/78	370.0	7 658	4 098.0	4.83
8. Malaysia	1978	670.0	15 487	n.a.	4.33
9. Seychelles	1977	2.5	63	9.0	4.00
10. Mauritania	1978	19.5	545	136.0	3.58
11. Korea	1977	1 184.0	34 616	7 399.0	3.42
12. Guyana	1976	14.8	438	93.0	3.38
13. Saint Lucia	1977	1.9	65	7.8	2.92
14. Thailand	1977	533.0	18 522	5 272.0	2.88
15. Papua New Guinea	1978	40.0	1 773	n.a.	2.26
16. Indonesia	1978	1 032.7	49 294	15 342.0	2.09
17. Sri Lanka	1978	51.2	2 467	780.0	2.08
18. Ghana	1975	96.7	5 203	2 125.0	1.90
19. Samoa	1978	1.3	68	31.8	1.90
20. Congo	1975	12.0	638	100.0	1.88
21. Panama	1976	36.5	2 004	340.0	1.82
22. Liberia	1977	10.2	700	100.0	1.46
23. Peru	1978	160.0	11 412	1 244.0	1.40
24. Tanzania	1978	59.3	4 350	1 981.0	1.36
25. Norway	1978	531.0	40 021	2 187.0	1.33
26. Hong Kong	1978	173.1	13 240	320.1	1.31
27. Oman	1978	30.0	2 585	77.8	1.16
28. Gambia	1975	1.2	106	59.0	1.13
29. Tunisia	1978	62.7	5 911	904.0	1.06
30. Spain	1977	1 253.0	121 045	10 539.0	1.04
31. USSR	1978	6 235.0	613 893 a/	106 940.0	1.02
32. Madagascar	1977	18.0	1 857	n.a.	1.00
33. Malawi	1977	7.6	841	299.8	0.90
34. Ecuador	1975	38.2	4 324	922.1	0.88

Table VII (continued)

Country	Year	Gross Value of Fisheries Output (ex-vessel prices) (million U.S.$)	GDP at Purchaser's Value (million U.S.$)	Agricultural GDP (million U.S.$)	Fisheries Output as a % of the GDP at Purchaser's Value
35. Ivory Coast	1978	54.6	6 530	1 897.0	0.84
36. Barbados	1977	3.5	425	18.7	0.82
37. India	1976/77	640.0	81 258	30 687.0	0.79
38. Mauritius	1978	6.0	771	122.0	0.78
39. Yemen Arab Rep.	1975/76	8.6	1 135	505.0	0.76
40. Burundi	1975	2.9	433	255.0	0.67
41. Denmark	1978	365.0	55 972	n.a.	0.65
42. Chile	1977	91.5	14 775	1 519.0	0.62
43. Pakistan	1976/77	91.9	15 095	4 412.0	0.61
44. Cameroon	1976/77	20.0	3 315	1 027.0	0.60
45. Portugal	1976	92.6	15 415	2 023.0	0.60
46. Guinea	1977	5.0	877	201.3	0.57
47. Uruguay	1978	22.8	4 333	485.0	0.53
48. Zambia	1976	14.1	2 697	342.0	0.52
49. Mexico	1978	456.5	92 305	9 680.0	0.49
50. Greece	1978	147.5	31 384	4 743.0	0.47
51. Zaire	1975	18.0	4 332	676.0	0.42
52. Ireland	1978	46.2	12 040	1 694.0	0.38
53. Japan	1978	3 574.0	983 885	47 093.0	0.36
54. Bermuda	1977/78	1.5	467	1.8	0.32
55. Malta	1978	2.2	721	31.0	0.31
56. New Zealand	1978	48.8	16 851	n.a.	0.30
57. Israel	1977	30.6	10 560 b/	776.0	0.29
58. Trinidad & Tobago	1976	7.3	2 818	83.0	0.26
59. Canada	1978	572.7	228 590	6 274.0	0.25
60. Cyprus	1977	2.8	1 100	160.0	0.25
61. Dominican Rep.	1978	11.8	4 695	910.0	0.25
62. Australia	1977/78	248.0	101 361	4 616.0	0.24
63. Italy	1977	440.9	195 476	14 800.0	0.23
64. Singapore	1978	17.4	7 730	119.0	0.23
65. Brazil	1977	312.1	171 879	17 303.0	0.18
66. Finland	1977	56.2	31 569	2 807.0	0.18
67. Netherlands	1977	191.0	106 437	4 471.0	0.18
68. Kenya	1975	5.1	3 007	831.0	0.17
69. France	1978	744.0	472 460	n.a.	0.16

Table VII (continued)

Country	Year	Gross Value of Fisheries Output (ex-vessel prices) (million U.S.$)	GDP at Purchaser's Value (million U.S.$)	Agricultural GDP (million U.S.$)	Fisheries Output as a % of the GDP at Purchaser's Value
70. UK	1978	489.0	309 608	7 135.0	0.16
71. Egypt	1977	25.0	18 764	4 568.0	0.13
72. Sweden	1977	89.5	87 380	3 309.0	0.10
73. USA	1977	1 854.0	2 112 000	62 000.0	0.09
74. Syrian Arab Rep.	1977	5.0	6 580	1 298.0	0.08
75. Belgium	1978	49.3	96 830	2 418.0	0.05
76. Germany, Fed. Rep.	1978	189.8	638 618	16 829.0	0.03
77. Saudi Arabia	1976	13.4	60 340	549.0	0.02

a/ Net Material Product

b/ Net Domestic Product at Factor Cost

Sources: Monthly Bulletin of Statistics, June 1980, Vol. XXXIV, No. 6, United Nations "Country Profiles", published by Fishery Policy and Planning Division, FAO, Rome.

Table VIII

The Relative Importance of Fisheries Output for the National Agriculture (1978)

Country	Year	Gross Value of Fisheries Output (ex-vessel prices) (million U.S.$)	GDP at Purchaser's Value (million U.S.$)	Agricultural GDP (million U.S.$)	Fisheries Output as a % of the Agricultural GDP
1. Bermuda	1977/78	1.5	467	1.8	83.33
2. Maldives	1978	7.0	22	8.7	80.46
3. Hong Kong	1978	173.1	13 240	320.0	54.09
4. Cape Verde Islands	1976	4.2	43	9.0	46.67
5. Oman	1978	30.0	2 585	78,0	38.46
6. Senegal	1975	108.0	1 467	310.0	34.84
7. Seychelles	1977	2.5	63	9.0	27.78
8. Saint Lucia	1977	1.9	65	7.8	24.36
9. Norway	1978	531.0	40 021	2 187,0	24.28
10. Philippines	1978	1 285.1	23 335	6 362.0	20.20
11. Burma	1978	345.0	4 309	1 867.0	18.47
12. Barbados	1977	3.5	425	19.0	18.42
13. Korea Rep.	1977	1 184.0	34 616	7 399.0	16.00
14. Guyana	1976	14.8	438	93.0	15.91
15. Singapore	1978	17.4	7 730	119.0	14.62
16. Mauritania	1978	19.5	545	136.0	14.34
17. Peru	1978	160.0	11 412	1 244.0	12.86
18. Congo	1975	12.0	638	100.0	12.00
19. Spain	1977	1 253.0	121 045	10 539.0	11.84
20. Denmark	1976	301.0	51 002	2 633.0	11.43
21. Panama	1976	36.5	2 004	340.0	10.74
22. Liberia	1977	10.2	700	100.0	10.20
23. Thailand	1977	533.0	18 522	5 272.0	10.11
24. Canada	1978	572,7	228 590	6 274.0	9.13
25. Bangladesh	1977/78	370.0	7 658	4 098.0	9.03
26. Trinidad & Tobago	1976	7.3	2 818	83.0	8.80
27. Japan	1978	3 574.0	983 885	47 093.0	7.59
28. Malta	1978	2.2	721	31.0	7.10
29. Tunisia	1978	62.7	5 911	904.0	6.94
30. UK	1978	489.0	309 608	7 135.0	6.85
31. Indonesia	1978	1 032.7	49 294	15 342.0	6.73
32. Sri Lanka	1978	51.2	2 467	780.0	6.56
33. Chile	1977	91.5	14 775	1 519.0	6.02
34. USSR	1978	6 235.0	613 893 [a/]	106 940.0	5.83
35. Australia	1977/78	248.0	101 361	4 616.0	5.37

Country	Year	Gross Value of Fisheries Output (ex-vessel prices) (million U.S.$)	GDP at Purchaser's Value (million U.S.$)	Agricultural GDP (million U.S.$)	Fisheries Output as a % of the Agricultural GDP
36. Mauritius	1978	6.0	771	122.0	4.92
37. Mexico	1978	456.5	92 305	9 680.0	4.72
38. Uruguay	1978	22.8	4 333	485.0	4.70
39. Portugal	1976	92.6	15 415	2 023.0	4.58
40. Ghana	1975	96.7	5 203	2 125.0	4.55
41. Netherlands	1977	191.0	106 437	4 471.0	4.27
42. Ecuador	1975	38.2	4 324	922.1	4.14
43. Zambia	1976	14.1	2 697	342.0	4.12
44. Samoa	1978	1.3	68	31.8	4.01
45. Israel	1977	30.6	10 560 b/	776.0	3.94
46. France	1977	679.0	380 718	17 812.0	3.81
47. Fiji	1974	3.8	560	112.0	3.35
48. Greece	1978	147.5	31 384	4 743.0	3.11
49. New Zealand	1977	39.4	14 795	1 295.0	3.04
50. Italy	1977	440.9	195 476	14 800.0	3.00
51. Tanzania	1978	59.3	4 350	1 981.0	3.00
52. USA	1978	1 854.0	2 112 000	6 200.0	2.99
53. Ivory Coast	1978	54.6	6 530	1 897.0	2.88
54. Ireland	1978	46.2	12 040	1 694.0	2.73
55. Sweden	1978	89.5	87 380	3 309.0	2.70
56. Zaire	1975	18.0	4 332	676.0	2.66
57. Malawi	1977	7.6	841	299.8	2.53
58. Guinea	1977	5.0	877	201.3	2.48
59. Saudi Arabia	1976	13.4	60 340	549.0	2.44
60. India	1976/77	640.0	81 258	30 687.0	2.09
61. Pakistan	1976/77	91.9	15 095	4 412.0	2.08
62. Belgium	1978	49.3	96 830	2 418.0	2.04
63. Gambia	1975	1.2	106	59.0	2.03
64. Finland	1977	56.2	31 569	2 807.0	2.00
65. Cameroon	1976/77	20.0	3 315	1 027.0	1.95
66. Brazil	1977	312.1	171 879	17 303.0	1.80
67. Cyprus	1977	2.8	1 100	160.0	1.75
68. Yemen Arab Rep.	1975/76	8.6	1 135	505.0	1.70
69. Dominican Rep.	1978	11.8	4 695	910.0	1.30
70. Burundi	1975	2.9	433	255.0	1.14
71. Germany Fed. Rep.	1978	189.8	638 618	16 829.0	1.13
72. Kenya	1975	5.1	3 007	831.0	0.61
73. Egypt	1977	25.0	18 764	4 568.0	0.55
74. Syrian Arab Rep.	1977	5.0	6 580	1 298.0	0.39

a/ Net Material Product b/ Net Domestic Product at Factor Cost

Sources: Monthly Bulletin of Statistics, June 1980, Vol. XXXIV, No. 6, United Nationa "Country Profiles", published by Fishery Policy and Planning Division, FAO, Rome.

ANNEX

TABLE A

Fish as Food 1975-77

Countries	Per caput Consumption of fish kg/year.	Share of fish in the total protein supply (%)	Share of fish in the animal protein supply (%)
Albania	1.8	0.6	2.6
Algeria	2.3	1.3	7.1
Angola	6.6	5.6	24.0
Antigua	27.9	16.3	28.0
Argentina	4.0	1.1	1.7
Australia	14.5	3.2	4.7
Austria	7.8	2.1	3.5
Bahamas	17.7	7.8	12.6
Bahrein	15.7	b)	b)
Bangladesh	10.3	7.6	56.4
Barbados	27.1	10.3	17.5
Belgium	18.5	4.2	6.8
Belize	9.0	2.0	4.1
Benin	11.3	6.6	38.1
Bermuda	49.8	16.3	22.9
Bhutan	0.8	0.4	11.8
Bolivia	1.8	0.8	2.5
Botswana	2.0	0.9	2.5
Brazil	6.9	3.3	8.7
Brunei	31.6	11.5	24.9
Bulgaria	12.0	3.6	9.2
Burma	13.6	7.6	54.4
Burundi	4.7	2.3	28.6
Cameroon	10.4	6.3	38.0
Canada	18.1	3.8	5.8
Cape Verde Islands	27.1	12.0	40.3
Central African Rep.	5.8	3.9	18.5
Chad	14.7	7.6	34.6
Chile	16.0	3.7	10.5
China, People's Dem. Rep. a)	6.0	3.2	17.9
Colombia	3.4	2.1	4.6
Comoros	12.4	10.1	46.1
Congo	24.8	17.8	60.2
Costa Rica	4.6	2.1	4.5
Cuba	20.8	7.7	16.0
Cyprus	6.6	1.9	4.5
Czechoslovakia	7.9	2.4	4.2

	Per caput Consumption of fish kg/year	Share of fish in the total protein supply (%)	Share of fish in the animal protein supply (%)
Denmark	32.5	10.6	16.2
Dominica	21.6	12.9	29.6
Dominican Rep.	6.1	4.4	12.8
Ecuador	10.4	5.2	12.9
Egypt	4.2	2.4	9.2
El Salvador	2.2	1.1	3.8
Ethiopia	0.8	0.3	1.8
Faroe Islands	83.7	33.6	49.1
Fiji	26.7	12.9	36.5
Finland	25.9	7.7	11.4
France	22.2	0.4	7.3
French Guiana	25.4	11.5	21.3
French Polynesia	32.3	13.6	29.4
Gabon	24.5	12.5	25.1
Gambia	13.6	8.1	36.5
Germany, D.R.	18.7	5.5	9.5
Germany, F.R.	10.4	4.1	6.4
Ghana	27.5	21.4	68.1
Greece	15.7	4.6	9.9
Grenada	41.1	21.6	43.1
Guadeloupe	36.7	14.0	26.4
Guatemala	0.8	0.6	2.4
Guinea	4.7	2.9	26.7
Guinea Bissau	4.9	2.8	14.4
Guyana	20.9	10.0	26.9
Haiti	1.6	1.0	6.9
Honduras	1.0	0.6	2.3
Hong Kong	51.0	17.4	29.7
Hungary	5.0	1.4	2.9
Iceland	69.8	16.6	21.1
India	3.2	1.9	18.8
Indonesia	10.5	8.1	67.3
Iran	0.5	0.3	1.4
Iraq	2.8	1.3	6.3
Ireland	14.0	3.6	5.9
Israel	11.1	3.1	5.8
Italy	12.5	3.8	8.3
Ivory Coast	20.9	11.6	42.5
Jamaica	24.0	10.4	22.8
Japan	63.3	26.1	54.2
Jordan	2.1	1.4	6.0
Kampuchea	12.4	8.2	42.0
Kenya	2.7	1.3	5.6
Korea, Dem.Rep.	35.4	12.5	69.4
Korea, Rep.	46.5	13.0	65.5

	Per caput Consumption of fish kg/year	Share of fish in the total protein supply (%)	Share of fish in the animal protein supply (%)
Lao	6.2	3.3	18.6
Lebanon	3.4	1.3	6.6
Liberia	20.8	13.7	51.7
Libya	4.1	2.8	8.6
Macau	30.9	13.5	25.8
Madagascar	6.4	3.3	15.2
Malawi	12.7	5.4	55.2
Malaysia	34.6	18.1	49.3
Maldives	94.6	49.6	94.6
Mali	10.7	5.2	25.0
Malta	13.3	4.1	8.2
Martinique	37.4	14.9	27.3
Mauritania	20.9	9.7	19.5
Mauritius	15.7	9.4	28.4
Mexico	4.7	2.0	6.4
Mongolia	0.5	0.1	0.2
Morocco	4.6	2.2	16.5
Mozambique	2.0	1.4	11.4
Nepal	0.2	0.2	1.4
Netherlands	11.1	4.2	6.5
Neth. Antilles	17.2	6.4	10.4
New Caledonia	8.1	2.6	5.4
New Zealand	16.8	2.8	4.0
Nicaragua	5.1	2.1	5.0
Niger	0.8	0.5	3.1
Nigeria	10.5	5.9	39.0
Norway	20.6	8.6	13.3
Pakistan	1.4	0.6	2.5
Panama	5.1	2.8	6.1
Papua New Guinea	16.5	10.6	31.2
Paraguay	1.0	0.4	1.0
Peru	16.3	6.5	19.3
Philippines	33.2	22.1	58.2
Poland	20.5	6.1	11.1
Portugal	38.6	10.9	26.8
Réunion	20.6	8.8	21.1
Romania	5.7	2.2	5.6
Rwanda	0.3	0.2	3.3

	Per caput Consumption of fish kg/year	Share of fish in the total protein supply (%)	Share of fish in the animal protein supply (%)
Samoa	28.4	16.8	37.7
Sao Tome & Principe	9.9	6.4	35.9
Saudi Arabia	5.3	2.4	7.1
Senegal	40.4	18.4	60.5
Seychelles	67.6	b)	b)
Sierra Leone	26.6	16.3	69.5
Singapore	42.5	14.1	29.8
Solomon Isl.	21.0	15.1	47.1
Somalia	1.2	0.4	0.7
South Africa	7.5	3.5	9.6
Spain	35.2	10.4	19.8
Sri Lanka	11.3	8.5	52.2
St. Kitts etc.	28.6	15.6	29.7
Saint Lucia	29.2	15.4	29.9
St. Vincent	15.1	9.7	24.4
Sudan	1.5	0.6	2.1
Suriname	21.9	11.6	30.9
Sweden	32.4	9.1	13.6
Switzerland	10.3	2.7	4.3
Syria	1.5	0.5	2.7
Tanzania	15.5	9.1	31.7
Thailand	22.9	14.9	55.1
Togo	11.6	7.4	43.8
Tonga	12.5	6.0	15.4
Trinidad & Tobago	10.1	5.0	11.6
Tunisia	5.3	2.1	9.2
Turkey	4.5	1.8	8.0
Uganda	14.8	7.8	37.0
U.S.S.R.	28.6	9.1	18.4
U.K.	17.9	4.6	7.5
U.S.A.	15.3	3.0	4.4
Upper Volta	1.3	0.5	5.5
Uruguay	5.0	1.6	2.5
Vanuatu	76.5	31.9	50.7
Venezuela	10.1	5.7	11.2
Viet Nam	21.8	13.9	56.3
Yemen Arab Rep.	3.8	1.9	10.2
Yemen Peop. Dem. Rep.	12.4	8.8	34.3
Yugoslavia	3.0	1.2	3.5
Zaire	6.2	4.9	25.4
Zambia	12.3	6.1	28.2

Sources: Food Balance Sheets, 1975-77, Average and Per Caput Food Supplies, 1961-65 Average 1967-77, FAO, Rome 1980.

Unpublished Data, Standardised Food Balance Sheets, FIPP, Fisheries Department, Rome.

Footnotes: General Countries not included in this list are those where not all nutritional data are available and therefore no food balance sheets have been prepared.

a) Changes in the fisheries supply data of the People's Republic of China (except Taiwan) are due to change in its statistical time series.

b) For these countries only the per caput supply data are available.